O W N E R ' S M A N U A L

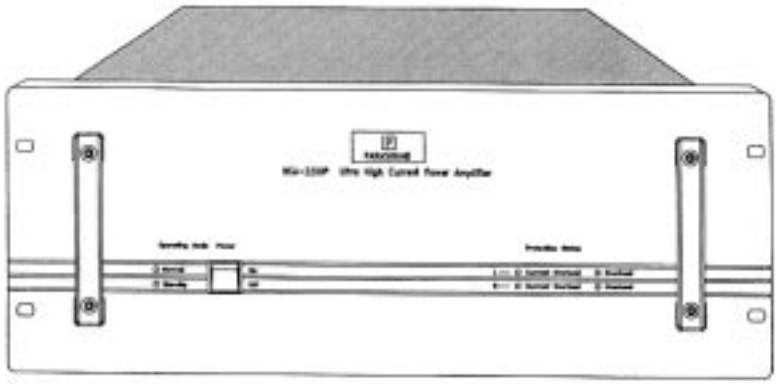
PARASOUND

H C A - 2200 II U l t r a H i g h C u r r e n t P o w e r A m p l i f i e r

Congratulations on your purchase of this precision audio component and thank you for your selection of Parasound. Your HCA-2200II was designed by one of the world's most renowned circuit designers, John Curl. It is among the elite of the finest power amplifiers ever made. You have made an outstanding investment in your musical pleasure for years to come.

Every part, every direct-coupled circuit, has been painstakingly selected for optimum musical quality on the finest and most challenging music and loudspeaker loads. Take a look at the special features later in this manual to fully appreciate its considerable prowess.

Please take a few moments now to read these instructions thoroughly so you may fully understand the sophisticated capabilities of your new Parasound HCA-2200II power amplifier.



Unpacking

The HCA-2200II is packed in two strong cardboard cartons. Save your cartons and the styrofoam inserts for future safe transport in case you move or the unit ever requires shipping for repair. Note, the inner printed carton is not itself strong enough for safe shipping, so you absolutely must place it into the additional outer "overcarton" before shipment.

To remove the unit, you may use the handles at front and rear to balance its weight. You may findit easier if you first rest the unit on its rear handles so you can change your grip before moving it to its correct horizontal position. Take care not to cut or scratch yourself on the exposed extruded metal heatsinks on either side of the unit.

The AC cord is packed separately in the carton. This is a specially selected audiophile grade cord and is the only cord we recommend for use with the HCA-2200II. Please don't lose it.

Before you proceed, find the serial number which is located on the rear panel ofthe unit and record it here for future reference or in case of casualty loss or theft:_____

Warning: To prevent fire or shock hazard, do not expose this unit to rain or moisture.

Placement of your HCA-2200II

Keep your Parasound HCA-2200II out of direct sunlight and away from windows which could ever be left open to let in rain. It should be placed away from heat sources such as hot air ducts or radiators. Make sure your cabinet or shelf can support its weight!

Do not place the unit directly on a pile carpet that could interfere with air flow into its bottom vent openings or heat sinks. If you place the HCA-2200II on the floor near your speakers, put it on a piece of wood to elevate it above the pile of the carpet. If you stack your components, it is better to place the HCA-2200II alongside your other components.

The HCA-2200II is biased well into Class A, resulting in noticeably warm operation which could disturb components stacked on top of it. If it is inside a cabinet, allow ample ventilation. Very sensitive low level sources placed too close might pick up some hum radiated from its enormous powersupply.

Rack Mounting the HCA-2200II

The HCA-2200II can be mounted in a standard EIA 4 unit 19" rack. Make sure you select heavy duty mounting bolts and nuts and use washers under the heads of the bolts to avoid scratching the amplifier's anodized front panel. Do not attempt to hold the unit in place yourself while you attach the bolts and nuts - have someone support the unit while it is being attached to the rack.

Making Connections

Before making any signal or speaker connections, make sure your power amplifier is turned off.

When making connections, make sure there is no strain or tension on input leads or speaker wires that could cause them to pull loose later on.

Input connections

In most stereo systems, you will use the gold-plated RCA jacks for the Right and Left channels. Make sure these are consistent with the right and left outputs from your preamplifier.

For professional applications you can use the alternate XLR (often called "Cannon") input connectors. The XLR inputs are for balanced lines whose ground is a third wire, separate from the audio signal + and - wires. The HCA-2200II employs this industry standard pin configuration:

Pin 1	Ground	Balanced signal lines are preferred for long signal runs to reduce hum pickup
Pin 2	+ signal	They are also useful in areas where excessive RF or 60 Hz television
Pin 3	- signal	broadcast synch. signals might interfere.

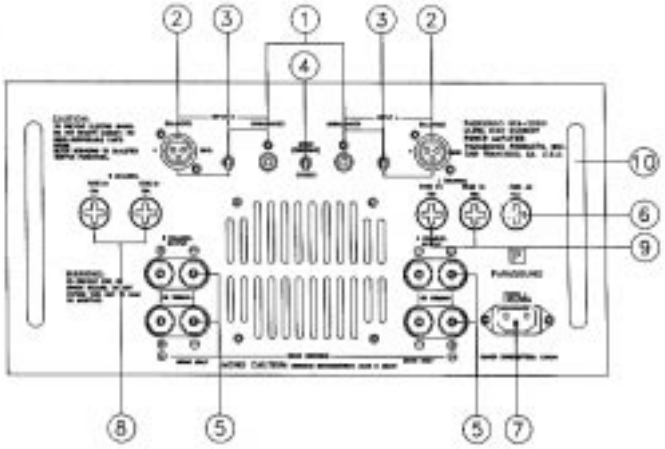
Some of the finest high end preamplifiers, including the Parasound P/FR-2000 and P/LD- 1500, provide balanced line outputs. If your preamplifier is so equipped, you may prefer to use the balanced connections which increase immunity to external noise. Be certain to check the pin configuration for your preamplifier's balanced line outputs and, if necessary, reverse the wires at one end of the right and left cables so each preamplifier + goes to the HCA-2200II +; each preamplifier - goes to the HCA-2200II's - ; each preamplifier ground goes to the HCA-2200II ground.

Note Balanced/Unbalanced lnput Select Switches

Select the inputs, XLR or RCA jack, which you have connected to the HCA-2200II Do not change the left and right channel input selector switches while the amplifier is operating!

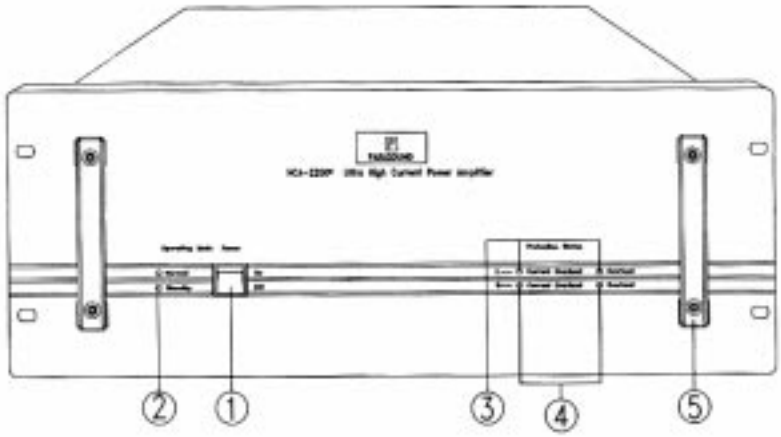
Rear Panel

1. Input Jacks - RCA type for unbalanced lines
2. Input connectors - XLR type for balanced lines
3. Input selector switches - balanced or unbalanced inputs
4. Mono Bridging Selector
5. Speaker Terminals
6. Main Fuse
7. AC Power cord receptacle
8. Right channel B+, B- rail fuses
9. Left channel B+, B- rail fuses
10. Carry handles



Front Panel

1. Power Switch
2. Standby-Operation LEDs
3. Left, Right channel Current Overload LEDs
4. Left, Right channel Overheat LEDs
5. Carry handles



Speaker connections

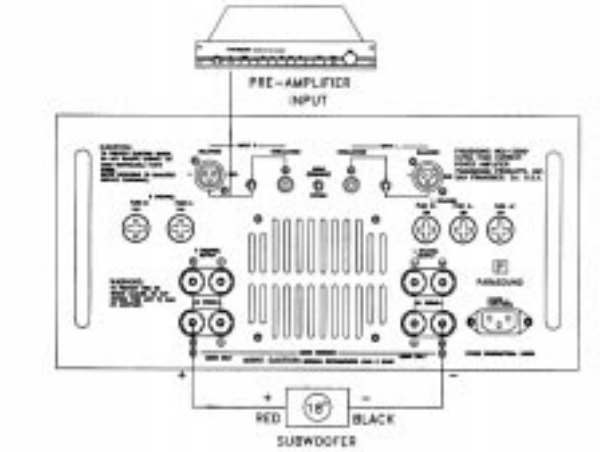
You may use bare solid or standard wire up to AWG 12, spade lugs, banana or dual banana plugs with the HCA-2200II "5-way" terminals. The 2nd pair of terminals is for bi-wiring (see below). If you use bare wire without spade lugs or plugs, make sure you strip only enough wire to fit into the hole that runs across the metal shaft of the terminal. Before inserting the wire, twist all its strands tightly to prevent strays that could cause a short circuit between + and - terminals!

Polarity

It is important to observe correct polarity when using the stereo mode. One side of the speaker wire will have some sort of mark, either printing, a raised ridge on the insulation or a different color of conductor. This permits you to know which wire you had connected to the + and which to the - speaker terminals so you can do exactly the same at the power amplifier terminals.

Mono Input and Output

For mono, you will connect your single speaker to only the Left channel red + speaker terminal and the Right channel red + speaker terminal. The Left and Right black - terminals are not connected. You must also move the Mono/Stereo toggle switch up to mono before turning on the amplifier to avoid damage to your amplifier or speaker. You only need to connect the mono input lead from the signal source to the HCA-2200II's Right channel XLR or RCA input jack.



Mono/Stereo Switch

Never move this switch while the amplifiers turned on!

If you accidentally leave this switch in the mono position, you will find stereo output very weak and distorted. Turn the unit off before switching back to stereo.

Minimum Mono Impedance

The minimum recommended load for mono is 8Ω. If you know that your speaker has a uniform impedance curve and you do not plan to drive the unit to maximum sustained high levels, you may use a 4Ω mono load.

These restrictions result from the mathematics of the bridging circuitry. In the bridge mode each channel of the amplifier functions for only the + or - half of the musical waveform. Thus, each channel "sees" only half of the speaker's impedance. Use of an 8Ω speaker means that the load for each channel is 4Ω. And for a 4Ω speaker, it results in only 2Ω.

Use good wire

For best results you should never use speaker wire thinner than 16 gauge - it will constrict the sound and deteriorate bass response. You may also wish to experiment with audiophile-grade speaker wire and interconnects. Each will have a different characteristic sound and some may be more compatible with the sonic signature of your various components. Your HCA-2200II is unconditionally stable with any reputable brand of wire.

Bi-Wiring

If your speakers are equipped for bi-wiring, you can easily make the multiple connections to the two pairs of speaker terminals on the HCA-2200II. Each set of terminals carries the same signal. You may also bi-wire a mono speaker by using upper and lower + jacks for Left and Right channels.

AC Line cord

Before you attach the AC cord, make sure the HCA-2200II power switch is in its off position.

The HCA-2200II includes an audiophile grade detachable AC cord. We recommend that you use only this cord and try to make direct connection to the AC wall outlet. Connection to a flimsy extension cord will seriously impair the sound reproduction of the HCA-2200II. We do not recommend you connect the amplifier to the accessory AC outlet on your preamplifier. The current draw exceeds the ratings of most preamplifier's power switches and power cords and could cause premature failure of the switch, not to mention degradation of the sound.

If you use an external AC line conditioner/surge suppressor, make sure it can handle the full power required by the amplifier. If you want the very best sound possible, you might consider having a licensed electrician run a dedicated AC power line for your HCA-2200II.This will isolate it from most of the power line interference caused by older wiring and household appliances.

While 3 pin grounded AC cords are standard on most high end components, sometimes it becomes necessary to reverse the polarity of the AC plug to reduce hum. In this case, you may use a 3 pin -to- 2 pin AC plug adaptor, or "cheater plug," which is readily available at low cost from any hardware store.

If you believe your system has a hum problem, the first step is to reverse the AC plugs of your other components, one by one, starting with the preamplifier. In many cases, this will eliminate the problem.

If this fails, it may be necessary to reverse the direction of the HCA-2200II's AC plug. Please do not cut off its 3rd ground pin; you may need it again if you change components. The preferable way is to purchase the "cheater" with only two pins which can insert in either way in the wall outlet. This will not compromise the sound quality of your system.

Operating the HCA-2200II

Power Switch

Press the upper side to turn the unit on; press the lower side to turn the unit off.

Standby/Operation LEDs

The red Standby LED will come on red whenever you first turn the unit on. It will light for about four to five seconds while the amplifier circuits are stabilizing before the protection relays disengage. At this time the red LED will turn off and the green Operate LED will come on to signal normal operation is available. It will also light up red whenever there is a short circuit or fault which triggers the protection circuits. Whenever the red LED illuminates , no sound can be heard. If the red Standby LED lights up during operation, it could indicate that more DC than its servos can handle is present at the input, an overload, short circuited speaker line or possible internal fault. The protection circuits automatically reset. Turn the unit off for at least 10 minutes while you check your connections, then try again. If the red LED continues to glow, you should contact your dealer or Parasound for further advice.

Current Overload LEDs

The Current Overload LEDs for Right and Left channels will only illuminate if the unit is driven at its maximum current capacity. These LEDs will indicate overload of the power supply just before the onset of audible distortion. In virtually all imaginable listening situations, these LEDs will rarely illuminate. If they are glowing often, please reduce the volume a little.

Overheat LEDs

The Overheat LEDs for Right and Left channels will only illuminate if the HCA-2200II starts to approach its maximum safe operating temperature. Multiple temperature sensors continuously monitor the temperature of critical circuits which are subject to heat buildup under hard operating conditions. When these LEDs come on, you must reduce the volume to permit the amplifier to
cool down, otherwise it may activate its thermal overload protection circuits, forcing you to wait for cool down until the circuits reset.

“Breaking-in" the HCA-2200II

Like other great power amplifiers, the HCA-2200II requires at least 72 hours of continuous operation after it is first turned on to sound its best. This gives the materials in various parts a chance to "form" so audio signals achieve greater definition, smoothness and transparency.

Although the unit will sound spectacular when you first operate it, you will find it worthwhile to listen again after a few days and you'll discover details in your music you may not have guessed were there.

Maintaining your HCA-2200II

The HCA-2200II requires no periodic maintenance and has no user serviceable parts inside. Do not remove the top cover to avoid risk of electric shock. To keep it clean use only a soft cloth and never use any solvents or abrasives. Fingerprints may be removed with a soft cloth moistened only with a few drops of water.

The amplifier has corrosion-free gold input jacks, but each year it is a good idea to twist the input plugs to preserve perfect signal transfer by removing corrosion which might have accumulated on the connecting plugs themselves. Make sure the unit is turned off while you do this.

In Case of Trouble

Fuses

The HCA-2200II has five external fuses which may blow as a result of an internal fault condition. This protects the unit from possible damage to internal parts. Never replace any fuse with a larger value. Substitution of a larger fuse may create serious stress or damage to internal parts and will void your warranty.

It is particularly important to replace the 10 ampere B+ and B- fuses with the same value and brand as the originals to preserve the impedance symmetry of the power supply. Use only Littlefuse brand fuses. The brand of the 15 ampere main fuse is not as critical to sound quality.

If you suspect a problem with this unit, first recheck all your connections. If one channel is inoperative, the trouble may be caused by another component or even a defective hookup cable. If only one channel is out for all sources, try reversing the L and R cables to the power amplifier (turn it off before moving wires). If the same channel stays out, it indicates trouble with the power amplifier itself. We suggest you contact your authorized Parasound dealer or call Parasound Technical Service if you suspect a problem. We will suggest other diagnostic tests you can easily perform yourself and which will save you a lot of trouble.

If it is determined that the HCA-2200II should be returned for inspection and possible servicing, you must first obtain a Return Authorization number. You will be asked to re-pack the unit in its original styrofoam packing and both of its cardboard cartons for proper protection in transit. You should send the unit by UPS with adequate insurance specified.

Units that arrive without the correct Return Authorization number, without a suitable shipping carton or evidence of improper internal packing or collect will be refused. We cannot accept collect shipments. After repair under warranty, the unit will be returned to you via prepaid UPS. If we found no problem with the unit, we will ship the unit by UPS collect for return shipping charges.

Parasound HCA-2200II Specifications

Continuous Power Output - Stereo
220 watts RMS x 2, 20Hz-20kHz, 8Ω
385 watts RMS x 2, 20Hz-20kHz, 4Ω
385 watts RMS x 2, 20Hz-20kHz, 2Ω

Continuous Power Output - Mono
750 watts RMS, 20Hz-201kHz, 8Ω
1000 watts RMS, 20Hz-20kHz, 4Ω

Current Capacity
50 amperes continuous
90 amperes peak

Slew Rate
>135V/μsecond

Frequency Response
2Hz-95kHz, +0/-1.5dB

Total Harmonic Distortion
< 0.05% at full power
< 0.009% typical levels

TIM
Unmeasurable

IM Distortion
< 0.03%

Dynamic Headroom
> 1.5dB

lnterchannel Crosstalk
> 84dB at IkHz
> 74dB at 20kHz

lnput lmpedance
100KΩ/RCA-unbalanced, 200KΩ/XLR-balanced

S/N Ratio
>114dB, input shorted, IHF A weighted

Damping Factor
> 1000 at 20Hz

Dimensions
19" wide x 7" high x 15" deep

Weight
60 Ibs. net

AC Power Requirements
1000 watts

Specifications and features subject to change without notice.

Special Features

- Two independent 1200vA toroid power transformers
- Independent transformer windings for driver stage regulators
- Higher driver rail voltages and independent regulation to prevent sag
- 100,000uF computer-grade capacitors in power supply
- Multiple polystyrene bypass capacitors in power supply
- Cascode Class A input stages with matched J-FET pairs
- Hand picked Mosfets in high voltage driver stages
- 24 5OMhz, 15 ampere output transistors, B-matched complements
- Output transistors direct-coupled without inductors
- DC servo direct-coupled audio circuits with 0.3Hz rolloff
- Linear tracking, instantaneous acting DC servos
- Pure Class A operation up to >6 watts output; Class AB-1 thereafter
- Balanced input circuits, XLR connectors, separately switched
- Gold-plated metal structure RCA input jacks
- Multiple temperature sensors and silver-cadmium relay protection
- FR-4 glass epoxy circuit boards, outputs double clad for high current
- Dual mono circuit topology for superior separation past 20kHz
- Proprietary quick-settling bias circuits obviates warmup period
- Silver plated audiophile-grade wiring drivers to outputs
- Precision 1% tolerance Holco and Resista metal film resistors

About the Designer of the HCA-2200II

We created the Parasound HCA-2200II to be among the finest amplifiers ever made for the reproduction of music. To build a world class amplifier, we turned to world class designer, John Curl. He is considered one of the most respected designers of our time. His advances in the art of audio have been renowned for over 20 years.

John was the designer of the Mark Levinson JC-2 preamplifier in 1974. A landmark product whose performance justified its stunningly high price, it inspired the emergence of the high end audio industry. He designed the mastering recorders used by Wilson Audio and Mobile Fidelity, the mixing consoles used by the Grateful Dead for concerts and recordings, and electronics at the site of the famed annual Montreux Jazz Festival in Switzerland. Most recently he redesigned the recording electronics for Stereophile Magazine.

John has published definitive articles on advanced circuit design and the influence of different capacitor types on the reproduction of music. He designed the Symmetry electronic crossover, SOTA head amplifier and collaborated with noted Finnish designer Matti Otala in explorations of the phenomenon of Transient Intermodulation Distortion.

John also builds the wonderfully musical, quiet (and very expensive) Vendetta Research phono preamplifiers which have earned rave reviews in Audio, The Absolute Sound and repeated Class A distinction in Stereophile. He designs and builds the products the top reviewers purchase for their own listening pleasure. Those who can afford his designs have been a privileged few. The HCA-2200II is the latest version of John Curl's first amplifier designed for Parasound. Take another look at some of the special features in the Parasound HCA-2200II - these are the hallmark of the finest, most musical high-end audio models which have earned critical acclaim. And now they're yours.

May we also recommend our John Curl-designed P/FR-2000 and P/LD-1500 preamplifiers as ideal companions for your HCA-2200II?

Parasound HCA-2200II

Product Advisory

Your Parasound HCA-2200II uses a grounded AC cord. For most systems, this will give optimum performance.

However, with some systems a 60Hz hum may be audible. (50Hz overseas)

This does not indicate a fault with the HCA-2200II

It often happens with the most expensive high-end components that are equipped with grounded AC cords.

If you think your system has this problem, the first step is to reverse the AC plugs of your other components, one by one, starting with the preamplifier. In many cases, this will eliminate the problem.

If this fails to cure the hum, it will be necessary to reverse the way the AC plug of the HCA2200II inserts into the wall socket.

Please do not cut off the HCA-2200Il's 3rd ground prong on the AC plug; if you move or change other components, the ground prong may be needed to reduce hum.

The preferred way is to purchase a low cost plug adaptor (available at any hardware store)
which has a three pin socket to accept the 3 pin plug of the HCA-2200II But it has only two pins of equal size, so it may be inserted either way into your wall socket.

Using the AC plug adaptor (sometimes called a "cheater") in no way compromises the safety or sound quality of your system.

Parasound Limited Warranty (USA only)

Your Parasound HCA-2200II is covered by a limited warranty against defects in materials and workmanship for a period of two years from date of purchase. This warranty is provided by the Parasound dealer where the unit was purchased. Warranty repair will be performed only when your purchase receipt is presented to validate your ownership, date of purchase and authorized status of the selling dealer. Defective parts will be repaired or replaced without charge by your authorized dealer's store or the location designated by your dealer that is authorized to service Parasound equipment. Additional information is available by calling or writing to the Service Manager, Parasound Products, Inc. at the address below. Charges for unauthorized service and transportation costs are not reimbursable under this warranty,

This warranty becomes void if the product has been damaged by alteration, misuse, accident or neglect. Alteration includes removal, obscuration or defacement of its serial number. This warranty becomes void if unit has been burned out by abusive extended testing or operation with load impedances contrary to printed instructions. This warranty applies only to units used in residential, non-commercial situations. The warrantor assumes no liability for property damage or any other incidental or consequential damage whatsoever which may result from the failure of this product. Any and all warranties of merchantability and fitness implied by law are limited to the duration of this expressed warranty.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary state by state.

Please Stay in Touch

We'd like to hear from you about your experience with your Parasound HCA-2200II Of course we want to assist you with any questions you may have, but we'd also be thrilled to know how much you are enjoying the unit. You don't need to have a problem as an excuse to call.

Reviews on Parasound are coming in from all over the world and we continually have exciting new products in development. If you'd like us to keep you advised, just drop a line and ask to receive updates. We welcome your suggestions and look forward to hearing from you.

PARASOUND

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